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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,906	06/24/2003	Takashi Miyoshi	SAEG128.002AUS	2170

7590 02/14/2006
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EXAMINER

THOMAS, JAISON P

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/602,906	Applicant(s) MIYOSHI, TAKASHI	
	Examiner Jaison P. Thomas	Art Unit 1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, 5, and 10 are indefinite in the recital of "water-soluble organic high molecular compound" and applicant is suggested to amend to --water soluble organic high molecular weight compound-- as disclosed on page 30, lines 11-21 of the Specification. Claims 2-4, 6-9, and 11, being dependent upon Claim 1, are rejected as well.

For purposes of examination, the claim will be construed as requiring a water soluble organic high molecular weight compound.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-7, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US Patent No 2,617,742) and in view of Furusaki et al. (Furusaki et al., "Preparation of ITO Thin Films by Sol-Gel Method," Journal of the Ceramic Society of Japan, 102(2), pp 200-205 (1994)).

Olson teaches electroconductive transparent coatings formed on lime soda glass (Column 1, lines 1-4) that use tin compounds mixed with additives such as indium chloride (Column 7, lines 21-26). Tin compounds that are taught include tribenzyl tin chloride, tolyl tin trichloride, ethyl tin tribromide, and chlorostannic acid (Column 6, lines 69-72). The reference also teaches the composition to be prepared in a solvent such as water or in an organic solvent such as methanol or ethanol so that it may be applied to a base as a homogenous liquid or solution (Column 7, lines 4-8). Olson further teaches a method of applying the composition to a washed glass and the coated glass being suspended in a furnace at various temperatures (Examples I-XII, Columns 11-15). Olson, however, does not teach (1) the use of a high molecular weight organic compound in his composition and (2) the endothermic peak curve temperatures of the halogenated organotins, or (3) the specific viscosities and surface tensions of the coating solutions.

Furusaki et al. teaches the formation of an ITO thin film wherein the composition uses a polyvinyl alcohol (PVA), added at 0.3 % weight of the coating solution, as an auxiliary agent for improving film formation (pg. 200, right column, line 19 to pg. 201, left column, line 1).

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Furusaki et al. teaches the formation of an ITO thin film wherein the composition uses a polyvinyl alcohol (PVA), added at 0.3 % weight of the coating solution, as an auxiliary agent for improving film formation (pg. 200, right column, line 19 to pg. 201, left column, line 1).

In regards to matter (1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the composition of Olson to incorporate the polyvinyl alcohol of Furusaki as Olson teaches the possibility of using other transparent conductive films (Column 11, lines 14-17) and Furusaki teaches the benefit of adding the PVA to help improve film formation in an ITO film.

In regards to matter (2), it would have been obvious to one of ordinary skill in the art at the time the invention was made to reasonably expect that properties such as the thermal behavior of the halogenated organotins and the indium chloride disclosed in Olson to be similar to those of the compositions in the instant claims since both the Olson compositions and the claimed composition use similar components.

In regards to matter (3), it would have been obvious to one of ordinary skill in the art at the time the invention was made to reasonably expect that the properties of the solution of Olson and Furusaki to have similar surface tensions and viscosities as those required by the instant claims since both the Olson/Furusaki solution and the claimed solutions utilize similar components and both are being used in transparent conductive film forming applications.

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson and Furusaki as applied to claims 1-7, 10 and 11 above, and further in view of Yudasaka et al. (US Patent Application No. 2002/0074547A1).

Olson and Furusaki are relied upon as discussed above, however, neither teaches a method of forming a transparent conducting film requiring the steps of firing

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under a atmosphere with a higher partial oxygen pressure than air nor requiring a step of reducing heat treatment.

Yudasaka et al. teaches the formation of a thin film transistor using a transparent conductive indium tin oxide (ITO) film where the ITO film is created by applying a liquid solution or paste to a "top face" then firing the coating at range of temperatures for a given period of time in either air or in an oxygen containing atmosphere. Afterwards, the coating is annealed in a given range of temperatures for a given time under a hydrogen-containing atmosphere (pg. 15, paras. 0262-0263), which can be alternatively viewed as a heat reducing treatment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Olson discussed above to incorporate the steps of firing the coating in an oxygenated atmosphere and to subject the coating to a heat reducing treatment since Yudasaka generally teaches the benefit of this method in improving the conductivity and transparency of the resulting ITO thin film coating as well as removing any remaining organic solvent components.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The references are considered cumulative to or less material than those discussed above.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

J-T.

Jaison Thomas
Examiner
2/6/2006


Mark Kopeck
Primary Examiner